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Milling & Baking News
Weekly Journal for Breadstuffs Managers

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eurofood
Weekly news journal for the international food and drink industry published by Agra-Canadean Publications Ltd., London, in association with Agra-Alimentation S.A., France, and Sosland Publishing Co., U.S.A.

Soft red production in 1980 is record by wider margin than earlier indicated, according to August crop summary of U.S.D.A. At 433,295,000 bus, estimate is up 5,175,000 bus from July and 35% above 1979 harvest of 321,079,000 bus. It is more than double 1978 crop of 201,761,000 bus.

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MILLING & BAKING NEWS

SPECIAL REPORT

COMMENT

The Baking Census

This 24-page special section presents a comprehensive analysis of the 1977 Census of Manufactures for the Bread, Cake and Related Products Industry and the Cookies and Crackers Industry. The aim is to present baking with the basic information it needs in order to judge not just industry performance, but the business record of individual companies and plants.

Drawing upon the new statistical data provided by the every-five-years Census of Manufactures, the editors of *Milling & Baking News* have compiled an interpretative analysis of trends in baking dating back to the late 1940's. The examination of market shares by plants and states, of individual product shipments, of ingredient use and of capital spending provides one of the most complete reference works on baking ever made available.

This report provides much more than a historical review of the bread and cake and biscuit and cracker industries. Through careful interpretation of trends, it offers a new look at baking's future — a future that is exciting for both baking and its suppliers.

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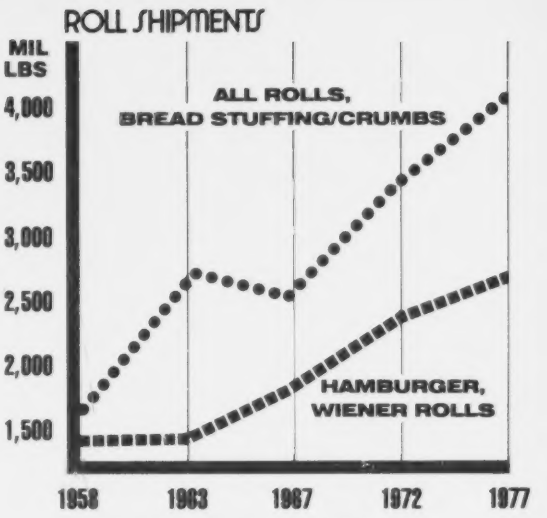
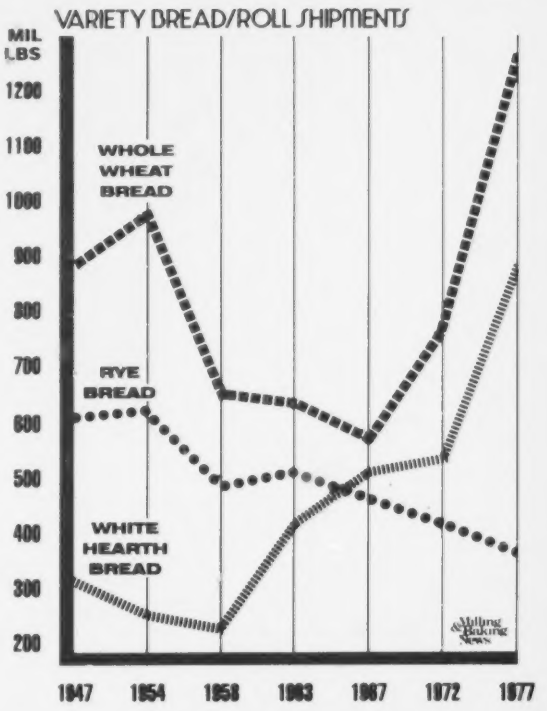
Value of bread/cake products by states

	White, wheat and rye bread		Rolls bread type		Sweet yeast goods		Soft cakes		Pies, fruit and custard		Cake type donuts	
	1977	1972	1977	1972	1977	1972	1977	1972	1977	1972	1977	1972
	(Millions of dollars)											
U.S. TOTAL	$3,500.7	$2,454.8	$1,679.6	$917.5	$640.4	$430.3	$949.9	$552.0	$297.1	$224.2	$241.1	$179.3
Northeast Region												
New England Div.												
Maine	24.0	19.6	18.1	8.5	—	—	—	—	—	—	—	—
Mass.	73.8	62.9	28.5	18.9	5.5	2.9	23.0	19.0	—	—	—	—
R.I.	14.3	D	16.2	D	—	—	—	—	—	—	—	—
Conn.	107.8	53.8	60.4	28.5	4.5	2.8	10.5	D	—	—	—	—
Middle Atlantic Div.												
New York	230.1	190.7	60.7	36.7	85.9	53.8	103.6	56.0	17.8	17.4	9.2	10.6
New Jersey	93.9	74.4	104.1	55.7	—	—	65.5	12.4	—	—	10.9	11.7
Pennsylvania	225.6	167.0	106.9	45.6	25.8	24.7	97.3	62.2	47.1	30.4	3.4	7.1
North Central Region												
East North Central Div.												
Ohio	189.0	146.2	115.5	60.5	30.1	26.2	75.8	53.3	21.8	18.4	22.9	13.9
Indiana	81.3	62.2	57.9	28.0	18.1	5.8	6.6	7.9	—	—	6.6	2.8
Illinois	206.7	162.4	95.7	83.7	47.5	28.6	56.5	43.3	12.6	15.2	5.5	12.0
Michigan	136.2	99.9	50.1	34.9	22.9	19.0	37.2	25.3	10.8	11.3	6.8	12.4
Wisconsin	70.4	41.9	41.2	19.4	10.6	—	4.3	3.3	—	—	5.5	6.7
West North Central Div.												
Minnesota	48.4	30.4	19.6	10.8	6.0	4.4	—	—	4.8	D	—	—
Iowa	49.1	34.1	17.6	8.8	3.2	4.4	—	—	—	—	4.8	1.0
Missouri	102.1	67.8	39.7	25.2	13.4	14.3	—	—	—	—	6.8	4.0
North Dak.	12.5	D	4.4	D	2.2	(NA)	—	—	—	—	—	—
Nebraska	23.2	15.5	18.1	7.2	—	—	—	—	—	—	—	—
Kansas	23.0	15.6	10.2	8.1	—	—	—	—	—	—	—	—
South Region												
South Atlantic Div.												
Maryland	91.2	62.0	24.2	22.8	11.4	9.1	13.8	D	10.2	7.8	5.2	4.9
Virginia	58.1	37.4	29.7	17.0	14.9	7.9	6.4	13.9	—	—	3.8	1.8
West. Va.	47.3	25.6	18.6	10.7	—	—	—	—	—	—	—	—
N. Carolina	97.4	74.7	58.0	26.7	19.0	16.8	26.0	26.6	13.9	6.9	—	—
S. Carolina	38.2	18.0	21.3	8.4	—	—	—	—	—	—	—	—
Georgia	74.8	42.1	27.0	21.2	37.3	18.7	48.1	26.2	—	—	13.1	D
Florida	120.6	94.7	51.4	20.6	16.7	8.4	—	—	—	—	—	—
East South Central Div.												
Kentucky	40.3	23.0	14.1	7.4	—	—	—	—	—	—	—	—
Tennessee	106.1	61.6	39.4	28.0	30.2	16.2	61.1	13.5	4.7	3.1	—	—
Alabama	54.2	40.0	41.0	20.3	14.2	6.0	—	—	—	—	—	—
Mississippi	24.6	20.4	—	—	—	—	—	—	—	—	—	—
West South Central Div.												
Arkansas	27.5	12.6	25.2	D	—	—	—	—	—	—	—	—
Louisiana	72.8	50.7	27.8	11.1	2.9	3.1	—	—	—	—	—	—
Oklahoma	40.0	21.7	15.4	D	—	—	—	—	—	—	—	—
Texas	204.7	114.8	86.5	41.9	50.5	19.6	41.1	20.0	10.3	5.6	10.1	5.6
West Region												
Mountain Division												
Colorado	38.6	29.1	13.2	D	9.6	7.2	10.1	5.5	4.1	3.4	7.5	3.0
New Mexico	14.9	9.2	—	—	—	—	—	—	—	—	—	—
Arizona	24.5	31.1	9.4	3.3	—	—	—	—	—	—	—	—
Utah	21.9	11.9	6.8	4.3	—	—	—	—	—	—	2.4	1.3
Pacific Division												
Washington	53.8	D	25.1	D	17.1	5.1	6.4	D	—	—	7.0	D
Oregon	55.0	33.0	20.7	33.0	4.4	(NA)	—	—	—	—	—	—
California	374.7	243.2	191.7	243.2	65.3	37.4	93.7	D	26.5	D	43.4	26.6

(NA: Not available. D: Withheld to avoid disclosure of individual plants.)



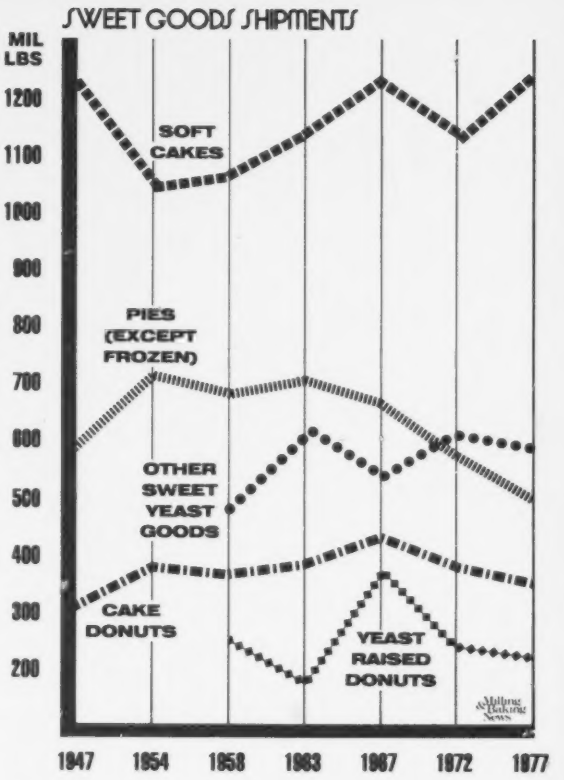


Quantity, value of bread and cake shipments

(Includes quantity and value of products of this industry produced by (1) establishments classified in this industry (primary) and (2) establishments classified in other industries (secondary). Transfers of the products of this industry from one establishment of a company to another establishment of the same company (interplant transfers) are also included.

1977 product code	Product	Unit of measure	1977			1972	
			Number of companies with shipments of $100,000 or more	Product shipments[1]		Product shipments	
				Quantity	Value (million dollars)	Quantity	Value (million dollars)
	BREAD, CAKE, AND RELATED PRODUCTS						
2051- --	Total		(NA)	(X)	7,965.9	(X)	5,180.8
20511 --	Bread, white, wheat, and rye, including frozen	Million lb. baked weight.	(NA)	10,882.9	3,500.7	11,418.7	2,454.8
20511 11	White pan bread		223	7,321.6	2,197.2	8,657.3	1,733.8
	Variety breads:						
20511 13	White hearth, including French, Italian, etc		193	879.9	308.5	549.7	162.6
20511 15	Whole wheat, cracked wheat, and other dark wheat breads		123	1,270.2	468.5	777.7	193.6
20511 17	Rye, including pumpernickel		117	387.3	157.7	426.0	117.9
20511 28	Other variety breads (raisin, potato, salt-rising, salt-free, canned, etc.)		90	412.7	172.1	339.0	99.7
20511 00	Bread, white, wheat, and rye, n.s.k.		(NA)	[2]611.2	196.7	[2]669.0	147.2
20512 --	Rolls, bread stuffing, and bread crumbs, including frozen		(NA)	4,124.1	1,679.6	3,460.7	917.5
	Rolls, bread-type:						
20512 33	Hamburger and weiner rolls		185	2,658.0	968.8	2,355.8	575.1
20512 35	Brown and serve rolls		79	263.5	115.6	376.2	109.8
20512 36	English muffins		39	334.8	164.5		
20512 37	Hearth rolls		71	136.5	79.4	586.3	188.9
20512 38	Other bread-type rolls (Kaiser, except hearth-type, Parker House, etc.)		112	257.3	123.0		
20512 41	Bread stuffing, croutons, and bread crumbs		41	229.5	128.3	114.4	34.6
20512 00	Rolls, bread stuffing, bread crumbs, including frozen, n.s.k.		(NA)	[2]244.5	99.5	[2]28.0	9.1
20513 --	Sweet yeast goods, except frozen		(NA)	[2]944.8	640.4	911.8	430.3
20513 13	Yeast-raised doughnuts		131	222.5	170.0	228.8	90.1
20513 98	All other types of sweet yeast goods, including sweet rolls and coffee cake		141	596.0	384.8	602.3	307.9
20513 00	Sweet yeast goods, n.s.k.		(NA)	126.3	85.6	[2]80.7	32.3
20514 --	Soft cakes, except frozen		(NA)	1,224.3	949.9	1,120.5	552.0
20514 13	Snack cakes		39	804.1	599.9		
20514 15	Fruit cakes, holiday type		35	24.7	28.0		
20514 19	All other soft cakes, including pound, sheet, cheese, etc.		135	318.3	257.5	1,120.5	552.0
20514 00	Soft cakes, except frozen, n.s.k.		(NA)	[2]77.2	64.5		
20515 --	Pies (fruit and custard) except frozen		(NA)	498.0	297.1	574.5	224.2
20515 13	Snack pies		44	286.9	157.0		
20515 19	All other fruit and custard pies		50	182.1	122.0	574.5	224.2
20515 00	Pies (fruit and custard) except frozen, n.s.k.		(NA)	[2]29.0	18.1		
20516 --	Pastries:						
20516 11	Pastries, except frozen, all types of baking powder leavened only, including cream puffs, eclairs, lady fingers, French pastry, puff pastry, etc		36	(X)	31.2	X	49.5
20517 --	Doughnuts (cake type):						
20517 11	Doughnuts, except frozen, cake type (baking-powder leavened)	Million lb. baked weight.	83	354.1	241.1	388.9	179.3
20510 00	Bread, cake, and related bakery products, n.s.k., typically for establishments with 10 employees or more (see note)		(NA)	(X)	372.3	X	252.1
20510 02	Bread, cake, and related bakery products, n.s.k., typically for establishments with less than 10 employees (see note)		(NA)	(X)	253.6	X	121.1

(NA) Not available. n.s.k. Not specified by kind. (X) Not applicable.
[1] Quantity and value reported by all producers of product, not just those with shipments of $100,000 or more.
[2] Quantity was estimated based on quantity-value relationship of other products in this product class.



Secondary products total $95 million

ESTABLISHMENTS in the Bread, Cake and Related Products Industry in 1977 had cookie and cracker product shipments valued at $51.5 million, according to an industry-product analysis in the 1977 Census of Manufactures.

The total included $46.6 million in cookies, wafers and ice cream cones and cups and $4.8 million in crackers, pretzels, biscuits and related products. Total shipments of products secondary to the Bread, Cake and Related Products Industry were valued at $94.9 million.

At the same time, establishments not in the Bread, Cake and Related Products Industry or the Cookies and Crackers Industry had bread and cake shipments in 1977 valued at $102.1 million. The total included six industries with bread and cake product shipments of more than $5 million: Fluid milk, canned fruits and vegetables, frozen specialties, dog, cat and other pet food; confectionery products, and food preparations not elsewhere classified.

(Continued from Page 16-C.)

clear indication still points to a cutback in bread and cake baking's use of fats and oils. In the case of shortening, the total 1977 usage is 467.2 million lbs, down 3% from 482.3 million in 1972, but still above most earlier years. The 1977 Census for the first time makes a separation between 100% vegetable shortening and animal shortening or blends of animal and vegetable shortening. It shows that wholesale baking's shortening use in 1977 was at 71% vegetable shortening, or 332.9 million out of 467.2 million lbs, while animal shortening and blends accounted for 134.3 million lbs, or 29%. Along that same line, use of lard by wholesale baking dropped in 1977 to only 123.5 million lbs, little more than half 1972 usage of 226.1 million and sharply under 266 million lbs in 1967. Use of margarine and puff paste in wholesale baking was more than halved between 1972 and 1977, according to the Census.

The following table shows usage by the Bread, Cake and Related Products Industry of its principal ingredients for a series of Census of Manufactures years:

	Wheat flour	Prepared Mixes	Shortening	Sweeteners
	(million lbs)			
1977	10,471.1	517 9	467.2	1,679.8
1972	10,086.2	519.2	482.3	1,505.8
1967	10,213.0	642.6	397.4	1,386.1
1963	9,579.0	437.8	306.9	1,296.2
1958	9,165.5	n.a.	302.5	1,335.7
1954	8,656.1	n.a.	253.5	1,146.9

Sharp reductions occurred in wholesale baking's use of both dry milk and various egg products. Dry milk use in bread and cake baking in 1977 is estimated at 162.7 million lbs, down 12% from the level of 184.9 million lbs five years ago and 21% less than the 206.4 million lbs used in 1967.

From the 1958 peak of 269 million lbs, dry milk use by wholesale baking has fallen by 84.1 million lbs, or 31%.

In the case of eggs, liquid, dried and frozen, in terms of dry weight equivalent, usage by bread and cake bakers in 1977 is estimated at only 94.1 million lbs, down a whopping 36% from the 1972 total of 146.1 million. Indeed, the fall is even sharper than that, since the 1972 usage does not include dried eggs. Frozen and liquid egg use in baking in 1967 amounted to 160.2 million lbs, in 1963 was 178.8 million and in 1958 accounted for 168.0 million.

First-time yeast estimate, 312.7 million lbs

For the first time, the 1977 Census of Manufactures sought data on wholesale baking's use of yeast. The total yeast use in the final report is 312.7 million lbs, at a delivered cost of $72.1 million.

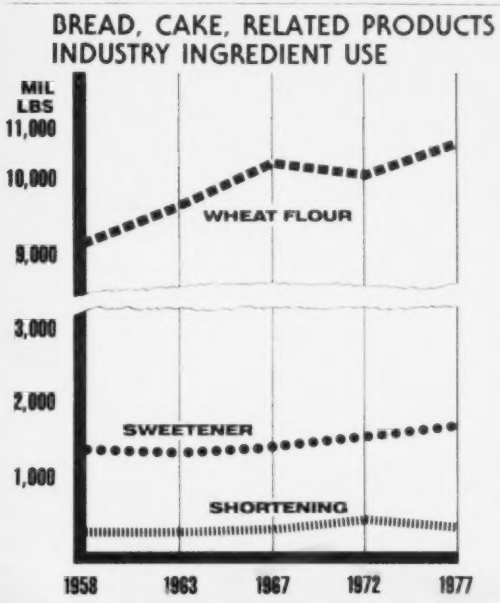
Also for the first time in the 1977 Census, data are presented on the delivered cost of chocolate (compounds, cocoa, chocolate liquor, etc.), total of which is estimated at $54.1 million.

Equal to 72% of all materials consumed by industry

The $2,829.1 million of materials consumed and purchased in the Bread, Cake and Related Products Industry represents 72% of the total cost of materials of $3,909 million estimated for this industry. "Total cost" refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred in acquiring the materials.

The following table shows the breakdown of the total cost of materials for the Bread, Cake and Related Products Industry and for Wholesale Bakeries for both 1977 and 1972:

	Cost of materials (millions)			
	Total bread, cake and related products		Wholesale baking	
	1977	1972	1977	1972
Total cost	$3,909.0	$2,623.6	$3,458.2	$2,250.2
Materials	2,829.1	1,957.8	2,505.5	1,640.4
Resales	938.9	605.8	828.3	559.1
Fuels consumed	77.3	31.0	68.7	26.3
Electricity	58.1	27.6	50.5	22.7
Contract work	5.6	1.4	5.2	1.4



Detailed baking data from five Census years (1958-1977)

	Establishments		All employes		Production workers			Value added by manufacture	Cost of materials	Value of shipments	Capital expenditures, new	End-of-year inventories
	Total	With 20 employes or more	Number (1,000)	Payroll (million dollars)	Number (1,000)	Man-hours (millions)	Wages (million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)	(million dollars)
BREAD, CAKE AND RELATED PRODUCTS												
1977 Census	**3,062**	**1,117**	**178.0**	**2,335.8**	**97.4**	**191.7**	**1,152.8**	**5,370.4**	**3,909.0**	**9,274.9**	**280.4**	**235.1**
Wholesale	2,900	976	160.1	2,107.2	84.5	166.6	986.3	4,892.4	3,458.2	8,348.1	256.7	209.1
Grocery Chain	100	87	12.3	174.7	10.0	19.8	134.6	370.9	386.9	755.9	14.2	20.4
Retail Multi-Outlet	62	54	5.5	54.0	3.0	5.3	32.0	107.0	64.0	170.9	9.5	5.6
1972 Census	**3,323**	**1,379**	**193.5**	**1,692.2**	**109.6**	**219.3**	**876.2**	**3,518.1**	**2,615.0**	**6,132.0**	**170.6**	**137.9**
Wholesale	3,077	1,177	167.7	1,480.5	89.5	180.0	705.9	3,073.1	2,248.4	5,320.6	139.7	n.a.
Grocery Chain	139	118	18.6	167.0	15.8	30.9	140.3	337.1	314.0	651.5	27.2	n.a.
Home Service	9	4	.3	1.8	.2	.3	.8	2.9	1.8	4.6	n.a.	n.a.
Retail Multi-Outlet	98	80	7.8	51.3	4.6	8.9	33.0	116.9	59.4	175.9	4.2	n.a.
1967 Census	**4,042**	**1,608**	**221.7**	**1,414.0**	**125.3**	**252.3**	**710.8**	**2,753.0**	**2,349.5**	**5,102.6**	**127.9**	**139.1**
Wholesale	3,751	1,387	188.5	1,223.8	101.7	207.5	576.5	2,390.4	2,010.0	4,400.7	115.2	115.9
Grocery Chain	128	104	18.4	111.8	16.4	30.0	95.6	229.4	239.1	468.3	9.2	16.7
Home Service	35	24	5.7	36.7	2.0	3.9	10.9	58.0	40.2	98.2	1.0	2.4
Retail Multi-Outlet	128	93	9.1	41.7	5.2	10.9	27.8	75.2	60.2	135.4	2.5	4.1
1963 Census	**5,010**	**1,904**	**237.0**	**1,300.3**	**129.9**	**267.6**	**645.7**	**2,403.8**	**2,103.1**	**4,506.0**	**95.3**	**130.1**
Wholesale	4,287	1,546	180.4	1,000.2	97.0	201.3	470.8	1,868.2	1,640.8	3,508.2	81.3	97.8
Grocery Chain	153	122	19.1	111.7	16.7	33.1	94.0	225.9	239.6	465.5	6.9	16.8
Home Service	281	97	24.0	127.0	7.8	15.8	39.1	201.5	132.0	333.5	4.3	9.4
Retail Multi-Outlet	289	139	13.5	61.4	8.5	17.4	41.7	108.1	90.6	198.8	2.8	6.1
1958 Census	**6,026**	**2,161**	**257.8**	**1,158.1**	**145.9**	**297.5**	**574.7**	**2,119.8**	**1,995.0**	**4,098.6**	**104.1**	**144.2**
Wholesale	5,240	1,768	194.4	877.1	109.3	223.4	420.1	1,613.3	1,531.9	3,130.4	81.7	68.9
Grocery Chain	178	128	18.9	87.1	16.5	33.0	73.5	168.8	214.1	382.5	7.5	15.9
Home Service	361	146	30.5	142.5	11.2	22.6	45.9	244.4	161.7	406.1	9.9	13.2
Retail Multi-Outlet	247	119	14.1	51.3	9.0	18.5	35.1	92.4	87.4	179.6	5.1	6.2

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Key operating ratios for cookies, crackers

Year	Payroll per employee (dollars)	Assets per employee (dollars)	Production workers as percent of total employment (percent)	Annual hours of production workers (number)	Average hourly earnings of production workers (dollars)	Cost of materials as percent of value of shipments (percent)	Cost of materials and payroll as percent of value of shipments (percent)	Assets as percent of value of shipments (percent)	Value added per employee (dollars)	Payroll as percent of value added (percent)	Value added per production worker hour (dollars)
	INDUSTRY 2052, COOKIES AND CRACKERS										
1977 Census--	12 119	(NA)	77	1 969	5.55	42	60	(NA)	38 763	31	25.30
1976 ASM----	11 522	16 310	77	1 981	5.21	42	60	25	37 164	31	24.25
1975 ASM----	10 365	15 817	76	1 996	4.69	47	63	24	34 378	30	22.40
1974 ASM----	9 658	15 565	77	1 996	4.33	50	67	25	29 575	32	19.07
1973 ASM----	8 723	13 066	78	2 003	3.94	46	65	28	24 630	35	15.70
1972 Census--	8 197	12 810	80	1 981	3.74	42	61	29	24 790	33	15.57
1971 ASM----	7 233	11 871	78	1 956	3.27	43	61	29	22 621	31	14.65
1970 ASM----	6 783	11 179	80	1 967	3.01	43	62	30	20 551	33	13.02
1969 ASM----	6 294	10 703	81	1 924	2.83	45	64	32	18 059	34	11.51
1968 ASM----	6 191	10 834	80	1 985	2.80	44	63	32	18 601	33	11.59
1967 Census--	5 901	10 694	80	1 982	2.66	45	64	33	17 449	33	10.93
1966 ASM----	5 502	(NA)	80	1 979	2.47	46	64	(NA)	16 730	32	10.55
1965 ASM----	5 188	(NA)	79	1 970	2.37	45	63	(NA)	15 882	32	10.08
1964 ASM----	5 101	9 137	79	2 011	2.29	45	63	32	15 545	32	9.76
1963 Census--	4 930	8 643	78	1 994	2.21	45	64	32	14 513	33	9.22

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (NA) Not available. n.e.c. Not elsewhere classified. (S) Withheld because estimate did not meet publication standards. (X) Not applicable.

Historical statistics for cookies, crackers

Year[1]	Companies[2] (no.)	All establishments: Total (no.)	All establishments: With 20 employees or more (no.)	All employees: Number (1,000)	All employees: Payroll (million dollars)	Production workers: Number (1,000)	Production workers: Hours (millions)	Production workers: Wages (million dollars)	Value added by manufacture (million dollars)	Cost of materials (million dollars)	Value of shipments (million dollars)	Expenditures and assets: New capital expenditures (million dollars)	Expenditures and assets: Gross value of fixed assets (million dollars)	End-of-year inventories (million dollars)	Ratios: Specialization (percent)	Ratios: Coverage (percent)
	INDUSTRY 2052, COOKIES AND CRACKERS															
1977 Census--	263	324	172	43.8	530.2	34.0	67.0	372.2	1 695.9	1 265.3	2 960.5	85.6	(NA)	172.0	94	94
1976 ASM----	(NA)	(NA)	(NA)	41.9	482.8	32.4	64.2	334.7	1 557.2	1 166.0	2 718.2	50.5	683.4	157.4	(NA)	(NA)
1975 ASM----	(NA)	(NA)	(NA)	41.0	425.0	31.5	62.9	295.3	1 409.5	1 269.3	2 671.0	39.7	648.5	146.3	(NA)	(NA)
1974 ASM----	(NA)	(NA)	(NA)	38.9	375.7	30.2	60.3	261.7	1 150.5	1 188.1	2 331.0	59.9	605.5	148.8	(NA)	(NA)
1973 ASM----	(NA)	(NA)	(NA)	41.9	365.5	32.8	65.7	259.3	1 032.0	874.0	1 898.2	36.2	547.5	106.9	(NA)	(NA)
1972 Census--	257	315	177	41.1	336.9	33.0	65.4	244.8	1 018.9	742.2	1 763.5	36.7	526.5	89.0	96	95
1971 ASM----	(NA)	(NA)	(NA)	41.2	298.0	32.5	63.6	208.5	932.0	714.6	1 640.5	24.4	489.1	90.9	(NA)	(NA)
1970 ASM----	(NA)	(NA)	(NA)	42.4	287.6	34.0	66.9	201.9	871.4	667.8	1 532.7	21.7	474.0	82.5	(NA)	(NA)
1969 ASM----	(NA)	(NA)	(NA)	43.8	275.7	35.7	68.7	194.5	791.0	658.2	1 453.0	19.5	468.8	76.9	(NA)	(NA)
1968 ASM----	(NA)	(NA)	(NA)	42.2	261.3	34.1	67.7	189.7	785.0	636.6	1 421.4	26.8	457.2	74.1	(NA)	(NA)
1967 Census--	286	348	200	42.5	250.8	34.2	67.8	180.7	741.6	623.7	1 363.8	24.0	454.5	74.0	97	93
1966 ASM----	(NA)	(NA)	(NA)	42.5	234.4	34.1	67.5	167.2	712.7	620.2	1 327.3	33.2	(NA)	73.7	(NA)	(NA)
1965 ASM----	(NA)	(NA)	(NA)	42.4	220.0	33.9	66.8	158.5	673.4	563.7	1 235.6	30.9	(NA)	64.9	(NA)	(NA)
1964 ASM----	(NA)	(NA)	(NA)	42.2	215.3	33.4	67.2	154.0	656.0	540.8	1 197.8	15.3	385.6	61.7	(NA)	(NA)
1963 Census--	286	356	208	43.2	213.0	34.1	68.0	150.9	627.0	523.3	1 150.1	26.4	373.4	61.8	97	95

- Represents zero. (D) Withheld to avoid disclosing operations of individual companies. (NA) Not available. n.e.c. Not elsewhere classified. r Revised. (S) Withheld because estimate did not meet publication standards. (X) Not applicable. (Z) Less than 50 thousand dollars or hours; under 50 employees.

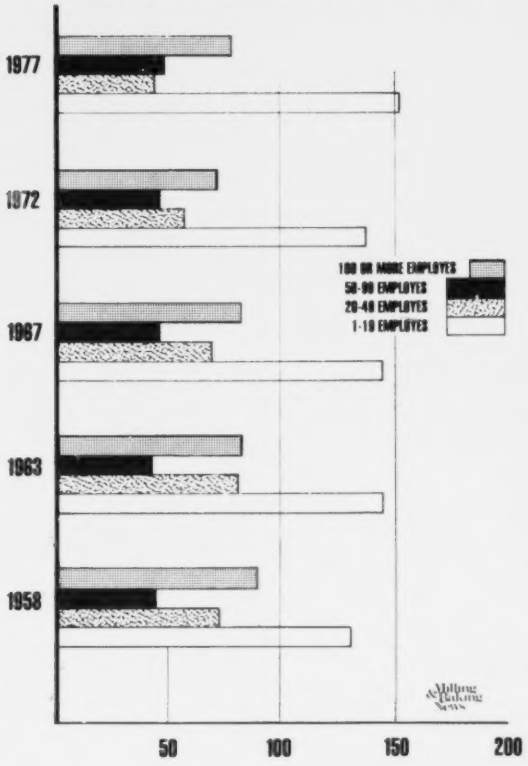
[1]In annual survey of manufactures (ASM) years, data are estimates based on a representative sample of establishments canvassed annually and may differ from results of a complete canvass of all establishments. ASM publication shows percentage standard errors. Unless otherwise noted, for data prior to 1963, see 1963 Census of Manufactures, vol. II, table 1 of the Industry chapter.

[2]For the census, a company is defined as a business organization consisting of one establishment or more under common ownership or control.

[3]Industry was defined or redefined for 1972 Census of Manufactures, so data are available only for years shown.

[4]Data for 1967 and 1963 were derived from Table 8, General Statistics for Establishments by Industry Specialization and Primary Product Class Specialization, in vol. II of the 1967 and 1963 Censuses of Manufactures. Separate data for other years are not available.

NUMBER OF BISCUIT AND CRACKER BAKERIES BY PLANT SIZE



Biscuit and cracker baking plants by employe size

	1958	1963	1967	1972	1977
1-19 employes	131	148	148	138	152
20-49 employes	72	83	70	57	44
50-99 employes	43	41	46	46	48
100 or more	88	84	84	74	80
Total plants	**334**	**356**	**348**	**315**	**324**

(Continued from preceding page.)

from 17.5 million in 1972. These totals compare with 19.4 million of dry milk used in 1967.

The industry's use of liquid, dried and frozen eggs, in terms of dry weight equivalent, is estimated for 1977 at 9.6 million lbs. No comparisons are given with earlier calculations, as "not applicable." In the 1972 Census of Manufactures, it was stated that this industry used 15 million lbs of frozen and liquid eggs, up from 10.2 million in 1972.

Initial estimate on yeast use placed at 6.1 million lbs

For the first time, the 1977 Census includes a figure on use of yeast in the Cookies and Crackers Industry, estimated at 6.1 million lbs at a cost of $2 million. That contrasts with the estimate that the Bread, Cake and Related Products Industry in 1977 used 312.7 million lbs of yeast.

Chocolate usage cost estimated at $83.4 million

Also new to the 1977 Census are estimates of the delivered cost of chocolate (compounds, cocoa, liquor, etc.) used by the Cookies and Crackers Industry.

The delivered cost is estimated at $83.4 million, compared with $54.1 million of chocolate used in the Bread, Cake and Related Products Industry.

Rising ingredient costs, but decline in share of sales

Growth over the years in the Coookies and Crackers Industry is measured in part by the rise in the cost of materials, ingredients, containers and supplies used by the industry. The following table shows Census of Manufactures estimates for a series of years of the delivered cost of materials, ingredients, containers and supplies used by this industry, S.I.C. 2052, as well as the percentage these major materials represent of the industry's total value of shipments:

	Delivered cost (millions)	Per cent of industry shipments
1977	$1,117.1	37.7%
1972	652.5	37.0%
1967	561.3	41.2%
1963	475.3	41.3%
1958	419.2	42.7%
1954	342.7	42.5%

Containers, wrapping first; flour second purchased item

Wheat flour is outranked by containers and wrapping materials as the major cost of materials, ingredients, containers and supplies purchased by the Cookies and Crackers Industry. For 1977, containers and wrapping materials accounted for 22% of all materials consumed on the basis of total cost of $247.3 million. The latter was up 57% from five years earlier, when the cost of containers and wrapping materials, at $157.3 million, represented 24% of all materials purchased.

Wheat flour was in second place, with a total 1977 cost of $166.3 million, up 19% from five years earlier. The wheat flour cost in 1977 represented 15% of the total cost of materials purchased by the Cookies and Crackers Industry, against 21% five years before.

Sweeteners and sugars record major cost increases

At the same time, sweetener cost to Cookies and Cracker Industry in 1977 was $130.6 million, or 12% of the total. The cost of sweeteners in 1977 was 56% up from 1972, when this ingredient accounted for 13% of the total cost.

The sharpest cost increase for the Cookies and Crackers Industry was experienced in shortening, where the 1977 total, $96.2 million, was 157% above the level of five years ago, or $37.4 million. In 1977, shortening accounted for 9% of the aggregate cost of purchased materials, compared with 6% in calculations from the 1972 Census of Manufactures.

Lard used in the Cookies and Crackers Industry in 1972 cost $40.5 million, against $34.2 million five years before.

Some measure of the impact of cost increases on the industry is provided by a unit cost assessment, obtaining by dividing the total cost of major ingredients by the number of units used in the Census years. These computations for the Cookies and Crackers Industry indicate the following cost data: Wheat flour, $6.55 per cwt in 1977, against $5.72 in 1972; sweeteners, $15.24 per cwt in 1977, against $11.86 in 1972, and shortening, $29.70 per cwt in 1977, contrasted with $14.42 five years earlier.

Equal to 72% of all materials consumed by industry

The data on purchased materials covered in this section of the Census of Manufactures represent the results of obtaining information from "many" manufacturing establishments on the consumption of major materials used in manufacturing. Information was obtained on those materials considered to be important parts of the cost of production in a particular industry and for which cost information is available from manufacturers' records. In the case of the Cookies and Crackers Industry, the $1,117.1 million of materials consumed and purchased represents 88% of the total cost of materials of $1,265.3 million estimated for this industry. "Total cost" is a term which refers to direct charges actually paid or payable for items consumed or put into production during the year, including freight charges and other direct charges incurred in acquiring the materials.

Other than ingredients and container supplies, the total cost of materials used in the Cookies and Crackers Industry includes $112.8 million for resales, $19 million for fuels consumed, $14.9 million for purchased electric energy, and $1.5 million for contract work.

Ingredients used, cookie/cracker industry

1977 material code	Material	Unit of measure	1977 Quantity	1977 Delivered cost (million dollars)	1972 Quantity	1972 Delivered cost (million dollars)
	INDUSTRY 2052, COOKIES AND CRACKERS					
	Materials, ingredients, containers, and supplies		(NA)	1,117.1	(NA)	652.5
	Wheat flour, except prepared flour mixes:					
204117	White bread-type flour	Million lb.	900.0	61.7		
204116	Cake-type flour		388.5	26.9	2,437.5	139.5
204118	Other wheat flour, including whole wheat gluten, but excluding prepared flour mixes		1,249.4	77.7		
	Prepared flour mixes:					
204557	Doughnut, cake, and yeast-type mixes	Million lb.	(D)	(D)	74.1	4.7
204558	Other prepared flour mixes, including cake and sweet goods, etc					
	Sweeteners:					
206011	Sugar (cane and beet) in terms of sugar solids		606.9	99.7	706.3	83.8
200611	Other natural and artificial sweeteners, including corn, blends of corn, and sugar, molasses, honey, etc		250.3	30.9	(X)	(X)
	Fats and oils, including frying oils:					
207011	100-percent vegetable shortening	Million lb.	233.5	72.7	259.4	37.4
207012	Shortening, animal and blends of animal and vegetable		90.4	23.5		
201151	Lard		178.2	40.5	204.0	34.2
207901	Margarine and puff paste		(D)	(D)	2.9	0.5
207014	Other fats and oils (cooking oils, butter, etc.)		97.0	30.8	118.0	19.0
202311	Dry milks		28.9	4.7	17.5	3.2
201722	Liquid, dried, and frozen eggs (in terms of dry weight equivalent)		9.6	9.4	(X)	(X)
209942	Yeast	Million lb.	6.1	2.0	(X)	(X)
206601	Chocolate (compounds, cocoa, chocolate liquor, etc.)		(X)	83.4	(X)	(X)
970005	Containers and wrapping materials		(X)	247.3	(X)	157.3
970099	All other materials, ingredients, containers, and supplies		(X)	248.7	(X)	165.3
971000	Materials, ingredients, containers, and supplies, n.s.k.[1]		(X)	44.4	(X)	18.7

(D) Withheld to avoid disclosing operations of individual companies. (NA) Not available. n.s.k. Not specified by kind.
[r] Revised. (X) Not applicable.
[1] For 1972, data excluded dried eggs.
[2] For 1972, material codes 209942 and 206601 were included with material code 970099.